One of the main aim of Potential field is to delineate the possible structures. There are many methods based on vertical and horizontal derivation of potential field for determining edge boundaries. In this study, the boundary analysis methods applied to the determination of locations of probable petroleum traps (fault traps) was mentioned and an application example is performed an edge detection with Analytic Signal, Horizontal Gradient Analytic Signal, Total Horizontal Derivative and Horizontal Derivative of Tilt Angle Methods which are some of these methods. Total Horizontal Derivative Method has been quite successful in demonstrating geometric frontiers of underground embedded geological structures and tectonic lineaments causing total magnetic anomalies.